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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,248	01/23/2004	Robert A. Norwood	7033.0009-01	4503

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EXAMINER

KUGEL, TIMOTHY J

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 01/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

28

Office Action Summary	Application No. 10/762,248	Applicant(s) NORWOOD ET AL.	
	Examiner Timothy J. Kugel	Art Unit 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☒ Claim(s) 2,3,9-13,20,22,24,27,35,37 and 40 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 June 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/29/2004</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

1. Claims 1-47 are pending as filed on 23 January 2004.

Priority

2. This application claims priority as a continuation of application 09/722,282 filed 28 November 2000 now abandoned, which was a continuation-in-part of application 09/507,582 filed 18 February 2000 now U.S. Patent 6,292,292 which claimed benefit of provisional application 60/120,876 filed 19 February 1999 now expired.

Information Disclosure Statement

3. The non-patent literature reference, "Synthesis and Optical Properties of New Inorganic Phosphate Matrices", Lou et al., Journal of Sol-Gel Science and Technology, 2, 787-789 (1994) listed on the information disclosure statement filed 29 July 2004, was not considered since a copy of the reference was not found in the parent application file.

Oath/Declaration

4. A new oath or declaration is required because the declaration refers only to the parent applications 09/507,582 filed 18 February 2000 now U.S. Patent 6,292,292, and 60/120,876 filed 19 February 1999 now expired, but not to the more recent parent application 09/722,282 filed 28 November 2000 now abandoned. The wording of an oath or declaration cannot be amended. If the wording is not correct or if all of the required affirmations have not been made or if it has not been properly subscribed to, a new oath or declaration is required. The new oath or declaration must properly identify the application of which it is to form a part, preferably by application number and filing date in the body of the oath or declaration. See MPEP §§ 602.01 and 602.02.

Drawings

5. The drawings are objected to as failing to comply with 37 CFR § 1.84(p)(5) because they do not include the following reference signs mentioned in the description: The specification, referring to Fig. 3 recites, 'X and Y are the same or different rare earth elements...' (Page 11 Lines 12-18), 'R and R' can each be fully halogenated group' (Page 12 Line 1) and 'Also, n is an integer greater than or equal to 1' (Page 12 Lines 6-7) however, the reference signs Y, R' and n do not appear on the drawing. Corrected drawing sheets in compliance with 37 CFR § 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The disclosure is objected to because of the following informalities:

7. The specification refers to the application as a continuation-in-part of co-pending application 09/507,582 filed 18 February 2000 (Page 1 Lines 2-3) and should refer to the application as a continuation of 09/772,282 filed 28 November 2000 now abandoned which was a continuation-in-part of application 09/507,582 filed 18 February 2000 now U.S. Patent 6,292,292.

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8. The acronyms 'FTTC', 'FTTH' and 'FTTD' are not adequately defined (Page 2 Lines 18-19).
9. U.S. Patent Application 09/507,582 is incorporated by reference (Page 7 Line 19), this patent has issued and the reference should be to U.S. Patent 6,292,292.
10. U.S. Patent Application Attorney Docket No. 07033.0008 is incorporated by reference (Page 7 Line 20), this patent has issued and the reference should be to U.S. Patent 6,538,805.
11. The word 'keytones' (Page 10 Line 23) should be 'ketones'.
12. Appropriate correction is required.

Claim Objections

13. Claims 2, 3, 9-13, 20, 22, 24, 27, 35, 37 and 40 are objected to because of the following informalities:
14. Claims 2 and 3 each recite 'A polymer according to claim 1...' and should each recite, 'The polymer according to claim 1'. For the purpose of examination the claim was construed to recite as such.
15. Claims 9-13 each recite 'The polymer according to claim 1...' and should each recite, 'The polymer composition according to claim 1'. For the purpose of examination the claims were construed to recite as such.
16. Claim 9 recites 'poly[2,2-bistrifluoromethyl-4,5,-difluoro-1,3-dioxole-co-tetrafluoroethylene]' instead of 'poly[2,2-bistrifluoromethyl-4,5,-difluoro-1,3-dioxole-co-tetrafluoroethylene]', and recites 'poly[2,3-(perfluoroalkenyl) perfluorotetrahydrofuran'

instead of 'poly[2,3-(perfluoroalkenyl)perfluorotetrahydrofuran]'. For the purpose of examination the claim was construed to recite as such.

17. Claims 10 and 27 each recite 'tetraflourethylene' instead of 'tetrafluoroethylene'. For the purpose of examination the claims were construed to recite as such.

18. Claim 20 recites 'comprising' instead of 'comprises'. For the purpose of examination the claim was construed to recite as such.

19. Claim 22 recites '...wherein a ratio of X to Y is between...' instead of '...wherein the ratio of X to Y is between...' For the purpose of examination the claim was construed to recite as such.

20. Claim 24 recites 'one of oxygen and sulfur' instead of 'one of oxygen or sulfur'. For the purpose of examination the claim was construed to recite as such.

21. Claim 35 recites '...wherein a weight ration of...' instead of '...wherein the weight ration of...' For the purpose of examination the claim was construed to recite as such.

22. Claim 37 recites 'one of powder and pellets' instead of 'one of powder or pellets'. For the purpose of examination the claim was construed to recite as such.

23. Claim 40 recites 'flouropolymer' instead of 'fluoropolymer'. For the purpose of examination the claim was construed to recite as such.

24. Appropriate corrections are required.

Claim Interpretation

25. For the purpose of examination, the elements of Group VI_A—now known as Group 16—were construed to be oxygen (O), sulfur (S), selenium (Se), tellurium (Te) and polonium (Po); the elements of Group V_A—now known as Group 15—were

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construed to be nitrogen (N), phosphorus (P), arsenic (As), antimony (Sb) and bismuth (Bi); and the rare earths were construed to be scandium (Sc), yttrium (Y), lanthanum (La), cerium (Ce), praseodymium (Pr), neodymium (Nd), promethium (Pm), samarium (Sm), europium (Eu), gadolinium (Gd), terbium (Tb), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm), ytterbium (Yb) and lutetium (Lu).

Claim Rejections - 35 USC § 112

26. The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

27. Claims 1-47 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

28. Claims 1, 14, 31, 36, 39, 46, and 47 are indefinite and incomplete in failing to state what 'n' represents (see Page 9 Lines 1-2). For the purpose of examination these claims were construed to each recite, 'where n is an integer greater than 1'.

29. Claims 2, 15 and 16 are indefinite, inaccurate and misleading in including aluminum as a possible X and/or Y, since aluminum is not a rare earth. For the purpose of examination, claim 1 was construed to recite '...where: X is a rare earth element or aluminum...' and claim 14 was construed to recite '...where: X is a first rare earth element or aluminum; Y is a second rare earth element or aluminum;...'.

30. Claims 2, 5, 8-11, 15, 16, 25-28, 32 and 40 recite Markush groups which are not considered proper for the reasons that they are indefinite as to scope and incomplete as to their memberships in not reciting, 'the group consisting of' after 'chosen from' or using

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the term 'comprising' followed by the membership of each group listed in the alternative. For the purpose of examination each of these claims was construed to recite a Markush group in the proper format.

31. Claim 7 is indefinite in stating '...wherein D is the same or different and is oxygen or sulfur' referring to the formula $\{X[DDZRR']_3\}_n$ in claim 1. Since claim 1 refers to D as 'one of the elements of Group VI_A' and used the notations R and R' to represent two different fully halogenated organic groups, it is taken that even though two Ds appear in the formula they represent the same element. For the purpose of examination, the claim was construed to recite, '...wherein D is oxygen or sulfur'.

32. Claim 13 is indefinite in stating '...wherein a ratio of the one of the perfluoropolymer, the fluoropolymer and the optical polymer is approximately 6 to 1 by weight.' The claim recites three components but only gives the ratio for two components. For the purpose of examination the claim was construed to recite '...wherein the ratio of the polymer and one of the perfluoropolymer, the fluoropolymer and the optical polymer is approximately 6 to 1 by weight.'

33. Claims 22 and 23 are indefinite in stating '...wherein the ratio of X to Y...' without reciting what type of ratio is being claimed. For the purpose of examination the claims were construed to recite '...wherein the weight ratio of X to Y...'

34. Claims 31-35 and 39-47 are indefinite and inaccurate and fail to properly point out the invention in reciting 'dissolving' instead of 'removing' in the last lines of claims 31, 39, 46 and 47 (see Page 6 Lines 15-18). For the purpose of examination these claims were construed as such.

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35. Claims 36-38 are incomplete and indefinite in lacking antecedent basis for 'the copolymer' while not identifying the copolymer.

36. Claim 45 is indefinite in lacking antecedent basis in claim 39 or 43 for 'the shearing process'. For the purpose of examination the claim was construed to recite 'a shearing process'.

Double Patenting

37. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

38. Claims 1, 2, 7, 8 and 10 rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 6 and 7 of U.S. Patent No. 6,292,292 (Garito et al.). Although the conflicting claims are not identical, they are not patentably distinct from each other because Garito et al. claims a polymer composition comprising (i) a polymer of the general composition $\{X[OOPRR']_3\}_n$ where X is a rare earth element, R is a fully halogenated organic group and R' is a second fully halogenated group; and (ii) at least one halogenated polymer including fluororopolymers

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of the fluorinated polyimide type; therefore, the present claims which are broader are read over or fully embraced by the claims of said patent in an anticipatory nature.

Allowable Subject Matter

39. Claims 3-6, 9 and 11-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten to overcome the claim objections above, the rejections of claims 1, 2, 5 and 8-11 under 35 U.S.C. § 112 above, and in independent form including all of the limitations of the base claim and any intervening claims.

40. Garito et al. ('292) claims a polymer composition as above, but does not claim the polymer composition wherein R and R' are fluoroalkyls of the general composition C_xF_{2x+1} where $x \geq 1$; nor wherein $R = R'$; nor wherein R and R' comprise at least one of the group consisting of fluorine, chlorine or bromine; nor wherein the perfluoropolymer is chosen from the group consisting of poly[2,2-bistrifluoromethyl-4,5,-difluoro-1,3-dioxole-co-tetrafluoroethylene] and poly[2,3-(perfluoroalkenyl)perfluorotetrahydrofuran]; nor wherein the optical polymer chosen from the group consisting of polymethylmethacrylate, polystyrene, polycarbonate, and norborene polymers; nor wherein the polymer composition further comprises an amorphous polymer; nor the polymer composition wherein the ratio of the polymer and one of the perfluoropolymer, the fluoropolymer and the optical polymer is approximately 6 to 1 by weight.

41. Claims 14-47 would be allowable if rewritten to overcome the claim objections above and to overcome the rejections of claims 14-16, 22, 23, 25-28 and 31-37 under 35 U.S.C. § 112 above.

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42. Nannello et al. (Inorganic Coordination Polymers. XI. A New Family of Chromium (III) Bis(phosphinate) polymers, $[\text{Cr}(\text{OH})(\text{OPRR}'\text{O})_2]_x$, 1971, Journal of Polymer Science, Part A-1, 9, 3027-3038) teach a similar coordination polymer but with chromium in place of a rare earth element or elements, without fully halogenated ligands, and without blending the polymer with one of a perfluoropolymer, a fluoropolymer and an optical polymer.

43. Block (Polymeric Metal Phosphinates, 1970, Inorganic Macromolecules Reviews, 1, 115-125) teaches a similar coordination polymer with aluminum, but without a second rare earth element or fully halogenated ligands, and without blending the polymer with one of a perfluoropolymer, a fluoropolymer and an optical polymer.

44. Koeppen et al. (Rare-earth organic complexes for amplification in polymer optical fibers and waveguides, January 1997, J. Opt. Soc. Am. B, 14(1), 155-162) teach a rare earth polymer—but not with a second rare earth element or fully halogenated ligands—blended with an optical polymer—but not the solution method of blending the polymers of claims 31, 39, 46 and 47 of the instant application; or the shearing methods of blending the polymers of claim 36 of the instant application.

45. Norwood et al. (U.S. Patent 6,538,805) teach polymers of the general composition $\{\text{X}[\text{DDZRR}']_3\}_n$ and $\{\text{XY}[\text{DDZRR}']_3\}_n$ as above but not in polymer blends.

46. None of Nannello et al. (1971), Block (1970), Koeppen et al. (1997) or Norwood et al. ('805) teach the polymer composition wherein the perfluoropolymer is chosen from the group consisting of poly[2,2-bistrifluoromethyl-4,5,-difluoro-1,3-dioxole-co-tetrafluoroethylene] and poly[2,3-(perfluoroalkenyl)perfluorotetrahydrofuran]; nor

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wherein the optical polymer chosen from the group consisting of polymethylmethacrylate, polystyrene, polycarbonate, and norborene polymers; nor wherein the polymer composition further comprises an amorphous polymer; nor the polymer composition wherein the ratio of the polymer and one of the perfluoropolymer, the fluoropolymer and the optical polymer is approximately 6 to 1 by weight; nor the use of dimethyl acetamide as a blending solvent; nor the composition in the form of powder or pellets; nor the use of screw extrusion to blend the components.

Conclusion

47. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. 6,292,292	09-2001	Garito et al.
U.S. 6,538,805	03-2003	Norwood et al.

Nannello et al., Inorganic Coordination Polymers. XI. A New Family of Chromium (III) Bis(phosphinate) polymers, $[\text{Cr}(\text{OH})(\text{OPRR}'\text{O})_2]_x$, 1971, Journal of Polymer Science, Part A-1, 9, 3027-3038

Block, Polymeric Metal Phosphinates, 1970, Inorganic Macromolecules Reviews, 1, 115-125

Koeppen et al., Rare-earth organic complexes for amplification in polymer optical fibers and waveguides, January 1997, J. Opt. Soc. Am. B, 14(1), 155-162

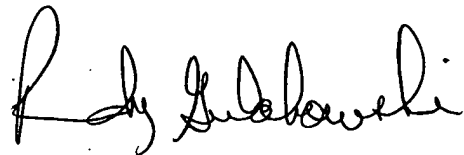
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Kugel whose telephone number is (571) 272-1460. The examiner can normally be reached on 7:00 AM - 4:00 PM Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Randy Gulakowski". The signature is fluid and cursive, with the first name "Randy" and last name "Gulakowski" clearly distinguishable.

RANDY GULAKOWSKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

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